CLAIMS

1. A method for generating a multiplexed sequence, the method comprising the steps of:

receiving at least one basic media data unit sequence;

determining modification priorities for a plurality of basic media data units belonging to the at least one basic media data unit sequence;

selecting basic media data units to be modified, in response to the modification priority of each basic media data unit;

modifying each of the selected basic media data units; wherein a modified selected basic media data unit is smaller than the corresponding selected basic media data unit; and

multiplexing the modified selected basic media data units and non-selected basic media data units to provide the multiplexed sequence.

2. The method according to claim 1 wherein the modification priority of a basic media data unit is responsive to a quality of the basic media data unit.

3. The method according to claim 2 further comprising the step of preventing the modification of basic media data units of a quality that is lower than a quality threshold.

4. The method according to claim 1 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data unit belonging to a group is responsive to a combination of qualities of basic media data units belonging to the group.

5. The method according to claim 1 wherein the modification priority of a basic media data unit is responsive to a compression level of the basic media data unit.

6. The method according to claim 5 further comprising the step of preventing the modification of basic media data units of a compression level that is higher than a compression level threshold.

7. The method according to claim 1 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data unit belonging to a group is responsive to a combination of compression levels of basic media data units belonging to the group.

8. The method according to claim 1 wherein the modification priority of a basic media data unit is responsive to a quality degradation of the basic media data unit.

9. The method according to claim 8 further comprising the step of preventing the modification of basic media data units of quality degradation that is higher than a quality degradation threshold.

10. The method according to claim 1 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data unit belonging to a group is responsive to a combination of quality degradation of basic media data units belonging to the group.

11. The method according to claim 1 wherein at least some of the basic media data units include temporal difference information representative of temporal differences between at least two basic media data units belonging to the same basic media data unit sequence; and wherein a modification priority of a basic media data unit is responsive to an amount of temporal difference information within the basic media data unit.

12. The method according to claim 11 wherein the modification priority of a basic media data unit is further responsive to the quality of the basic media data unit.

13. The method according to claim 11 wherein the modification priority of a basic media data unit is further responsive to the compression level of the basic media data unit.

14. The method according to claim 11 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

15. The method according to claim 11 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

16. The method according to claim 1 wherein the modification priority of each basic media data unit reflects the sequence of basic media data units to which it belongs.

17. The method according to claim 1 wherein each basic media data unit sequence is to be provided to a corresponding buffer; wherein the modification priority of each basic media data unit belonging to a basic media data unit sequence is responsive to a simulated status of the corresponding buffer.

18. The method according to claim 1 wherein the modification priority of a basic media data unit is responsive to external modification priority information.

19. The method according to claim 18 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's preferences.

20. The method according to claim 18 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's profile.

21. The method according to claim 18 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's behavior pattern.

22. The method according to claim 18 wherein at least a portion of the multiplexed sequence is multiplexed by at least one media provider, and the external modification priority information reflects a parameter selected from the list consisting of:

at least one media provider's preference; and

at least one media provider's profile.

23. The method according to claim 18 wherein at least a portion of the multiplexed sequence is generated by at least one media provider, and the external modification priority information reflects a parameter selected from the list consisting of:

at least one media provider's preference; and

at least one media provider's profile.

24. The method according to claim 18 wherein the external modification priority is provided by at least one entity selected from the group consisting of:

an end-user;

a group of end-users;

a multiplex sequence generator;

a basic media data unit provider; and

a basic media data unit sequences distributor.

25. The method according to claim 18 wherein the modification priority of a basic media data unit is further responsive to a quality of the basic media data unit.

26. The method according to claim 18 wherein the modification priority of a basic media data unit is further responsive to a compression level of the basic media data unit.

27. The method according to claim 18 wherein the modification priority of a basic media data unit is further responsive to a quality degradation of the basic media data unit.

28. The method according to claim 18 wherein the modification priority of a basic media data unit is further responsive to a dependency of at least one other basic media data unit upon the basic media data unit.

29. The method according to claim 18 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

30. The method according to claim 18 wherein the modification priority of a basic media data unit is further responsive to a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit.

31. The method according to claim 18 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

32. The method according to claim 18 wherein the modification priority of a basic media data unit is responsive to a combination of at least two parameters selected from the list consisting of:

a quality of the basic media data unit;

a quality degradation of the basic media data unit;

a compression level of the basic media data unit;

a dependency of the basic media data unit upon other basic media data unit;

a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit;

a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit; and

a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

33. The method according to claim 1 wherein the modification priority of a basic media data unit is responsive to a dependency of at least one other basic media data unit upon the basic media data unit.

34. The method according to claim 33 wherein the modification priority of a basic media data unit is further responsive to a quality of the basic media data unit.

35. The method according to claim 33 wherein the modification priority of a basic media data unit is further responsive to a compression level of the basic media data unit.

36. The method according to claim 33 wherein the modification priority of a basic media data unit is further responsive to a quality degradation of the basic media data unit.

37. The method according to claim 33 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

38. The method according to claim 33 wherein the modification priority of a basic media data unit is further responsive to a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit.

39. The method according to claim 33 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

40. The method according to claim 33 wherein the modification priority of a basic media data unit is further responsive to a combination of at least two parameters selected from the list consisting of:

a quality of the basic media data unit;

a quality degradation of the basic media data unit;

a compression level of the basic media data unit;

a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit;

a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit; and

a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

41. The method according to claim 33 wherein the dependency is reflected by temporal difference information.

42. The method of according to any of claims 1, 11, 18 and 33 wherein the step of selecting is preceded by a step of applying at least one lossless technique for generating the multiplexed sequence such that the amount of selected basic media data unit modifications is reduced.

43. The method according to any of claims 1, 11, 18 and 33 wherein a basic media data unit is selected from the list consisting of:

a group of pictures;
a picture;
a frame;
a slice;
a macroblock; and
a sequence of macroblocks.

44. The method according to any of claims 1, 11, 18 and 33 wherein a basic media data unit comprising signals selected from the list consisting of:

MPEG compliant signals;
original media signals;
JPEG compliant signals;
video signals;
audio signals;
data signals;
H.261 compliant media signals;
H.263 compliant signals;
streaming media signals;
high quality audio signals;
AC-3 audio signals; and
AAC audio signals.

45. The method according to any of claims 1, 11, 18 and 33 further comprising a step of transmitting the multiplexed sequence over a communication channel having an available bandwidth; and

wherein the bandwidth of the multiplexed sequence does not exceed the available bandwidth.

46. The method according to any of claims 1, 11, 18 and 33 further comprising a step of storing the multiplexed at a digital medium having an available storage space and wherein the size of the multiplexed sequence does not exceed the available storage space.

47. A method for generating and transmitting a multiplexed sequence over a communication channel, the communication channel has an available bandwidth, the method comprising the steps of:

receiving at least one basic media data unit sequence;

determining a modification priority of a plurality of basic media data unit of the received at least one basic media data unit sequence;

selecting basic media data units to be modified, in response to the modification priority and to the available bandwidth;

modifying each of the selected basic media data units; wherein a modified selected basic media data unit is smaller than the corresponding selected basic media data unit; and

providing the multiplexed sequence to the communication channel, the multiplexed sequence comprising modified selected basic media data units and non-selected basic media data units.

48. The method according to claim 47 wherein the modification priority of a basic media data unit is responsive to a quality of the basic media data unit.

49. The method according to claim 48 further comprising the step of preventing the modification of basic media data units of a quality that is lower than a quality threshold.

50. The method according to claim 47 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data

unit belonging to a group is responsive to a combination of qualities of basic media data units belonging to the group.

51. The method according to claim 47 wherein the modification priority of a basic media data unit is responsive to a compression level of the basic media data unit.

52. The method according to claim 51 further comprising the step of preventing the modification of basic media data units of a compression level that is higher than a compression level threshold.

53. The method according to claim 47 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data unit belonging to a group is responsive to a combination of compression levels of basic media data units belonging to the group.

54. The method according to claim 47 wherein the modification priority of a basic media data unit is responsive to a quality degradation of the basic media data unit.

55. The method according to claim 54 further comprising the step of preventing the modification of basic media data units of quality degradation that is higher than a quality degradation threshold.

56. The method according to claim 47 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data unit belonging to a group is responsive to a combination of quality degradation of basic media data units belonging to the group.

57. The method according to claim 47 wherein at least some of the basic media data units include temporal difference information representative of temporal differences between at least two basic media data units belonging to

the same basic media data unit sequence; and wherein the modification priority of a basic media data unit is responsive to an amount of temporal difference information within the basic media data unit.

58. The method according to claim 57 wherein the modification priority of a basic media data unit is further responsive to the quality of the basic media data unit.

59. The method according to claim 57 wherein the modification priority of a basic media data unit is further responsive to the compression level of the basic media data unit.

60. The method according to claim 57 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

61. The method according to claim 57 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

62. The method according to claim 47 wherein the modification priority of each basic media data unit reflects the sequence of basic media data units to which it belongs.

63. The method according to claim 47 wherein each sequence of basic media data unit is to be provided to a corresponding buffer; wherein the modification priority of each basic media data unit of a sequence is responsive to a simulated status of the corresponding buffer.

64. The method according to claim 47 wherein the modification priority of a basic media data unit is responsive to external modification priority information.

65. The method according to claim 64 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's preferences.

66. The method according to claim 64 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's profile.

67. The method according to claim 64 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's behavior pattern.

68. The method according to claim 64 wherein at least a portion of the multiplexed sequence is multiplexed by at least one media provider, and the external modification priority information reflects a parameter selected from the list consisting of:

at least one media provider's preference; and

at least one media provider's profile.

69. The method according to claim 64 wherein at least a portion of the multiplexed sequence is generated by at least one media provider, and the external modification priority information reflects a parameter selected from the list consisting of:

at least one media provider's preference; and

at least one media provider's profile.

70. The method according to claim 64 wherein the external modification priority is provided by at least one entity selected from the group consisting of:

a end-user;

a group of end-users;

a multiplex generator;

a basic media data unit provider; and

a basic media data unit sequences distributor.

71. The method according to claim 64 wherein the modification priority of a basic media data unit is further responsive to a quality of the basic media data unit.

72. The method according to claim 64 wherein the modification priority of a basic media data unit is further responsive to a compression level of the basic media data unit.

73. The method according to claim 64 wherein the modification priority of a basic media data unit is further responsive to a quality degradation of the basic media data unit.

74. The method according to claim 64 wherein the modification priority of a basic media data unit is further responsive to the dependency of at least one other basic media data unit upon the basic media data units.

75. The method according to claim 64 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

76. The method according to claim 64 wherein the modification priority of a basic media data unit is further responsive to a combination of qualities of basic

media data units that belong to a same basic media data unit group as the basic media data unit.

77. The method according to claim 64 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

78. The method according to claim 64 wherein the modification priority of a basic media data unit is responsive to a combination of at least two parameters selected from the list consisting of:

a quality of the basic media data unit;

a quality degradation of the basic media data unit;

a compression level of the basic media data unit;

a dependency of the basic media data unit upon other basic media data unit;

a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit;

a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit; and

a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

79. The method according to claim 47 wherein the modification priority of a basic media data unit is responsive to a dependency of at least one other basic media data unit upon the basic media data unit.

80. The method according to claim 79 wherein the modification priority of a basic media data unit is further responsive to a quality of the basic media data unit.

81. The method according to claim 79 wherein the modification priority of a basic media data unit is further responsive to a compression level of the basic media data unit.

82. The method according to claim 79 wherein the modification priority of a basic media data unit is further responsive to a quality degradation of the basic media data unit.

83. The method according to claim 79 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

84. The method according to claim 79 wherein the modification priority of a basic media data unit is further responsive to a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit.

85. The method according to claim 79 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

86. The method according to claim 79 wherein the modification priority of a basic media data unit is further responsive to a combination of at least two parameters selected from the list consisting of:

a quality of the basic media data unit;

a quality degradation of the basic media data unit;

a compression level of the basic media data unit;

a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit;

a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit; and

a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

87. The method according to claim 79 wherein the dependency is reflected by temporal difference information.

88. The method according to any of claims 47, 57, 64 and 79 wherein the step of selecting is preceded by a step of applying at least one lossless technique for generating the multiplexed sequence, such that the amount of selected basic media data unit modifications is reduced.

89. The method according to any of claims 47, 57, 64 and 79 wherein a basic media data unit is selected from the list consisting of:

a group of pictures;

a picture;

a frame;

a slice;

a macroblock; and

a sequence of macroblocks.

90. The method according to any of claims 47, 57, 64 and 79 wherein a basic media data unit comprises of signals selected from the list consisting of:

MPEG compliant signals;

original media signals;

JPEG compliant signals;

video signals;

audio signals;

data signals;

H.261 compliant media signals;

H.263 compliant signals;

streaming media signals;

high quality audio signals;

AC-3 audio signals; and

AAC audio signals.

91. A statistical multiplexer for providing a multiplexed sequence including at least one basic media data sequence, the statistical multiplexer comprising:

a control unit;

at least one input, coupled to the control unit, for receiving at least one basic input data unit sequence;

an output, coupled to the control unit and to a communication module, for providing a multiplexed sequence to a communication module; the communication channel has an available bandwidth;

a modification unit, coupled to control unit, to the at least one input and to the output, the modification unit is configured to modify selected basic media data units to provide corresponding basic media data units, in response to control units from the control unit; wherein a modified selected basic media data unit is smaller than the corresponding selected basic media data unit;

wherein the control unit is configured to:

determine a modification priority of a plurality of basic media data unit of the received at least one basic media data unit sequence;

select basic media data units to be modified, in response to the modification priority and to an available bandwidth of the communication module;

control the provision of the selected basic media data units to the modification unit and the modification of each of the selected basic media data units; and

control the provision of a multiplexed sequence including the modified selected basic media data units and non-selected basic media data units to the communication channel.

92. The statistical multiplexer according to claim 91 wherein the modification priority of a basic media data unit is responsive to a quality of the basic media data unit.

93. The statistical multiplexer according to claim 91 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data unit belonging to the group is responsive to a combination of qualities of basic media data units belonging to the group.

94. The statistical multiplexer according to claim 91 wherein the modification priority of a basic media data unit is responsive to a compression level of the basic media data unit.

95. The statistical multiplexer according to claim 91 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data unit belonging to the group is responsive to a combination of compression levels of basic media data units belonging to the group.

96. The statistical multiplexer according to claim 91 wherein the modification priority of a basic media data unit is responsive to a quality degradation of the basic media data unit.

97. The statistical multiplexer according to claim 91 wherein basic media data units are arranged in groups and wherein the modification priority of a basic media data unit belonging to the group is responsive to a combination of quality degradation of basic media data units belonging to the group.

98. The statistical multiplexer according to claim 91 wherein at least some of the basic media data units include temporal difference information representative of temporal differences between basic media data units belonging to the same basic media data unit sequence; and wherein the modification priority of a basic

media data unit is responsive to an amount of temporal difference information within the basic media data unit.

99. The statistical multiplexer according to claim 98 wherein the modification priority of a basic media data unit is further responsive to the quality of the basic media data unit.

100. The statistical multiplexer according to claim 98 wherein the modification priority of a basic media data unit is further responsive to the compression level of the basic media data unit.

101. The statistical multiplexer according to claim 98 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

102. The statistical multiplexer according to claim 98 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

103. The statistical multiplexer according to claim 91 wherein the modification priority of each basic media data unit reflects the sequence of basic media data units to which it belongs.

104. The statistical multiplexer according to claim 91 wherein each sequence of basic media data unit is to be provided to a corresponding buffer at a remote location; wherein the statistical multiplexer comprises a plurality of buffer emulators, each for emulating a corresponding buffer, and wherein the modification priority of each basic media data unit of a sequence is responsive to a simulated status of the corresponding buffer emulator.

105. The statistical multiplexer according to claim 91 wherein the statistical multiplexer is configured to receive external modification priority information, and wherein the modification priority if responsive to the external priority information.

106. The statistical multiplexer according to claim 105 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's preferences.

107. The statistical multiplexer according to claim 105 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's profile.

108. The statistical multiplexer according to claim 105 wherein at least a portion of the multiplexed sequence is provided to at least one end-user; and wherein the external modification priority information reflects at least one end-user's behavior pattern.

109. The statistical multiplexer according to claim 105 wherein at least a portion of the multiplexed sequence is multiplexed by at least one media provider, and the external modification priority information reflects a parameter selected from the list consisting of:

at least one media provider's preference; and

at least one media provider's profile.

110. The statistical multiplexer according to claim 105 wherein at least a portion of the multiplexed sequence is generated by at least one media provider, and the external modification priority information reflects a parameter selected from the list consisting of:

at least one media provider's preference; and

at least one media provider's profile.

111. The statistical multiplexer according to claim 105 wherein the external modification priority is provided by at least one entity selected from the group consisting of:

an end-user;

a group of end-users;

a multiplex generator;

a basic media data unit provider; and

a basic media data unit sequences distributor.

112. The statistical multiplexer according to claim 105 wherein the modification priority of a basic media data unit is further responsive to a quality of the basic media data unit.

113. The statistical multiplexer according to claim 105 wherein the modification priority of a basic media data unit is further responsive to a compression level of the basic media data unit.

114. The statistical multiplexer according to claim 105 wherein the modification priority of a basic media data unit is further responsive to a quality degradation of the basic media data unit.

115. The statistical multiplexer according to claim 105 wherein the modification priority of a basic media data unit is further responsive to the dependency of at least one other basic media data unit upon the basic media data units.

116. The statistical multiplexer according to claim 105 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

117. The statistical multiplexer according to claim 105 wherein the modification priority of a basic media data unit is further responsive to a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit.

118. The statistical multiplexer according to claim 105 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

119. The statistical multiplexer according to claim 105 wherein the modification priority of a basic media data unit is responsive to a combination of at least two parameters selected from the list consisting of:

a quality of the basic media data unit;

a quality degradation of the basic media data unit;

a compression level of the basic media data unit;

a dependency of the basic media data unit upon other basic media data unit;

a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit;

a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit; and

a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

120. The statistical multiplexer according to claim 91 wherein the modification priority of a basic media data unit is responsive to a dependency of at least one other basic media data unit upon the basic media data unit.

121. The statistical multiplexer according to claim 120 wherein the modification priority of a basic media data unit is further responsive to a quality of the basic media data unit.

122. The statistical multiplexer according to claim 120 wherein the modification priority of a basic media data unit is further responsive to a compression level of the basic media data unit.

123. The statistical multiplexer according to claim 120 wherein the modification priority of a basic media data unit is further responsive to a quality degradation of the basic media data unit.

124. The statistical multiplexer according to claim 120 wherein the modification priority of a basic media data unit is further responsive to a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit.

125. The statistical multiplexer according to claim 120 wherein the modification priority of a basic media data unit is further responsive to a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit.

126. The statistical multiplexer according to claim 120 wherein the modification priority of a basic media data unit is further responsive to a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

127. The statistical multiplexer according to claim 120 wherein the modification priority of a basic media data unit is further responsive to a combination of at least two parameters selected from the list consisting of:

a quality of the basic media data unit;

a quality degradation of the basic media data unit;

a compression level of the basic media data unit;

a combination of qualities of basic media data units that belong to a same basic media data unit group as the basic media data unit;

a combination of quality degradations of basic media data units that belong to a same basic media data unit group as the basic media data unit; and

a combination of compression levels of basic media data units that belong to a same basic media data unit group as the basic media data unit.

128. The statistical multiplexer according to claim 120 wherein the dependency is reflected by temporal difference information.

129. The statistical multiplexer according to any of claims 91, 98, 105 and 120 wherein the statistical multiplexer is configured apply at least one lossless technique such that the amount of selected basic media data unit modifications is reduced.

130. The statistical multiplexer according to any of claims 91, 98, 105 and 120 wherein a basic media data unit is selected from the list consisting of:

a group of pictures;

a picture;

a frame;

a slice;

a macroblock; and

a sequence of macroblocks.

131. The statistical multiplexer according to any of claims 91, 98, 105 and 120 wherein a basic media data unit comprises of signals selected from the list consisting of:

MPEG compliant signals;

original media signals;

JPEG compliant signals;

video signals;

audio signals;

data signals;

H.2691 compliant media signals;

H.263 compliant signals;
streaming media signals;
high quality audio signals;
AC-3 audio signals; and
AAC audio signals.

132. The statistical multiplexer according to any of claims 91, 98, 105 and 120 further configured to store the multiplexed at a digital medium having an available storage space and wherein the size of the multiplexed sequence does not exceed the available storage space.

133. The method according to any of claims 1, 11, 18, 33, 47, 57, 64 and 79 wherein the step of determination a modification priority involves applying a modification priority function; and wherein the modification priority function is responsive to at least one characteristic of at least one of the received basic media data unit.

134. The method according to any of claims 1, 11, 18, 33, 47, 57, 64 and 79 wherein the step of determination a modification priority involves applying a modification priority function; and wherein the modification priority function is responsive to at least one characteristic of at least one of the received basic media data unit, the at least one characteristic is selected from the group consisting of:

quality;
quality degradation; and
compression level.

135. The method according to any of claims 1, 11, 18, 33, 47, 57, 64 and 79 wherein the step of determination a modification priority involves applying a modification priority function; and wherein the modification priority function is responsive to at least one parameter selected from the group consisting of:

amount of received basic media data units;

amount of basic media data units belonging to predefined basic media data unit sequences;

reception rate of received basic media data units;

reception rate of basic media data units belonging to predefined basic media data sequences; and

the entity of received basic media data unit sequences.

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